IN THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Withdrawn) An isolated peptide comprising the amino acid sequence QA(Q/E)GQLV or functional equivalents thereof, wherein said peptide selectively homes to TNF receptor(s) of the vasculature of a heart.

2.-17. (Cancelled)

18. (Withdrawn) An isolated peptide comprising the amino acid sequence ARRGQAV or functionally equivalent thereof, wherein said peptide preferentially homes to BDNF receptor(s) of the vasculature of a heart.

19.-32. (Cancelled)

33. (Withdrawn) An isolated peptide comprising the amino acid sequence G(R/W)RFIRV or functional equivalent thereof, wherein said peptide preferentially homes to BDNF receptor(s) of the vasculature of a heart.

34.-51. (Cancelled)

52. (Withdrawn) A conjugate comprising a peptide according to claim 1 and a functional moiety, wherein said peptide selectively homes to TNF receptor(s) in the vasculature of a heart.

53.-65. (Cancelled)

66. (Withdrawn) A conjugate comprising a peptide according to claim 18 and a functional moiety, wherein said peptide preferentially homes to BDNF receptor(s) of the vasculature of a heart.

67.-74. (Cancelled)

75. (Withdrawn) A conjugate comprising a peptide according to claim 33 and a functional moiety, wherein said peptide preferentially homes to BDNF receptor(s) of the vasculature of a heart.

76.-85. (Cancelled)

86. (Withdrawn) A method for determining a young heart or young areas of a heart vasculature in a mammal comprising:

a) administering a peptide comprising the amino acid sequence QA(Q/E)GQLV or functionally equivalent modifications thereof, conjugated to a detectable marker, wherein said first peptide selectively homes to TNF receptor(s) in a vasculature of the heart; and

b) detecting the marker;

wherein a disproportionately high binding of QA(Q/E)GQLV is a young heart or young areas of a heart vasculature.

87.-91. (Cancelled)

92. (Currently Amended) A method for determining ~~a condition~~ healthy versus damaged areas of a heart vasculature in a mammal comprising:

a) administering a first peptide comprising the amino acid sequence identified in SEQ ID NO: 1, said peptide conjugated to a first detectable marker,

wherein said first peptide selectively homes to TNF receptor(s) in the vasculature of the heart;

b) administering a second peptide comprising the amino acid sequence identified in SEQ ID NO: 4, said peptide conjugated to a second detectable marker, wherein said peptide selectively homes to BDNF receptor(s) in a vasculature of the heart; and

c) detecting the first and second marker;

wherein a ratio of binding of the first peptide to the second peptide of greater than two indicates an area of healthy heart vasculature and wherein a ratio of binding of the first peptide to the second peptide of less than two indicates an area of damaged heart vasculature.

93.-101. (Cancelled)

102. (Withdrawn) A method for determining the condition of a vasculature of a heart in a mammal comprising:

a) administering a first peptide comprising the amino acid sequence QA(Q/E)GQLV or functionally equivalent modifications thereof, conjugated to a first detectable marker, wherein said first peptide selectively homes to TNF receptor(s) in the vasculature of the heart;

b) administering a second peptide comprising the amino acid sequence ARRGQAV or G(R/W)RFIRV or functionally equivalent modifications thereof, conjugated to a second detectable marker, wherein said second peptide homes to BDNF receptor(s) in the vasculature of the heart; and

c) detecting the first and second marker;

wherein a disproportionately high ratio of binding of the first peptide to the second peptide indicates a young heart or young areas of the heart vasculature or wherein a

disproportionately low ratio of binding of the first peptide to the second peptide indicates an old heart or old areas of the heart vasculature.

103.-115. (Cancelled)

116. (Withdrawn) A method for delivering a functional moiety to a young heart vasculature in a mammal, the method comprising administering a conjugate of claim 52.

117.-126. (Cancelled)

127. (Previously Presented) A method for delivering a functional moiety to a heart having damaged vasculature in a mammal, the method comprising administering a conjugate, said conjugate comprising a peptide comprising the amino acid sequence identified in SEQ ID NO: 4 and said functional moiety, wherein said peptide preferentially homes to BDNF receptor(s) of the vasculature of a heart.

128.-138. (Cancelled)

139. (Withdrawn) A method for discovering mimics of amino acid sequence QA(Q/E)GQLV or functionally equivalent modifications thereof, comprising:

a) determining a three-dimensional structure of said sequence;

b) identifying compounds comprising said structure; and

c) determining the capacity of said compounds for selective homing to TNF receptor(s) in a heart vasculature of a mammal;

wherein compounds which selectively home to TNF receptor(s) in the vasculature of the heart are mimics.

140.-146. (Cancelled)

147. (Withdrawn) A method for discovering mimics of amino acid sequence ARRGQAV or G(R/W)RFIRV or functionally equivalent modifications thereof, comprising:

a) determining a three-dimensional structure of said sequence;

b) identifying compounds comprising said structure; and

c) determining the capacity of said compounds for homing to BDNF receptor(s) in a heart vasculature of a mammal;

wherein compounds which home to BDNF receptor(s) in the vasculature of the heart are a mimics.

148.-156. (Cancelled)

157. (Withdrawn) A method for delivering a functional moiety to a old heart vasculature in a mammal, the method comprising administering a conjugate of claim 75.

158 (Previously Presented) A method according to claim 92, wherein BDNF receptor is trktB receptor.

159. (Previously Presented) A method according to claim 158, wherein the trkB receptor is truncated trktB.

160. (Previously Presented) A method according to claim 92, wherein said vasculature is microvasculature.

161. (Previously Presented) A method according to claim 127, wherein the BDNF receptor is trkB receptor.

162. (Previously Presented) A method according to claim 161, wherein the trkB receptor is truncated trkB.

163. (Previously Presented) A method according to claim 127, wherein said functional moiety is a therapeutic agent.

164. (Previously Presented) A method according to claim 163, wherein said therapeutic agent is estrogen.

165. (Previously Presented) A method according to claim 127, wherein said functional moiety is a detectable marker.